

In the claims:

Please enter the following amendments:

1. **(Currently Amended)** A nucleic acid present in other than its natural environment, wherein said nucleic acid encodes a far red shifted *Stichodactylidaen* chromoprotein or fluorescent mutant thereof, and wherein said nucleic acid has a sequence identity similarity of at least about 75% with ~~a nucleotide sequence of~~ SEQ ID NO: 11.

2. **(Original)** The nucleic acid according to Claim 1, wherein said nucleic acid is isolated.

3. **(Currently Amended)** A nucleic acid present in other than its natural environment, wherein said nucleic acid encodes a fluorescent *Stichodactylidaen* protein having an emission maximum ranging from ~~about~~ 620 to 680 nm.

4. **(Original)** The nucleic acid according to Claim 3, wherein said nucleic acid is isolated.

5. **(Currently Amended)** A nucleic acid present in other than its natural environment having a sequence identity similarity of at least about 80% with a ~~nucleotide sequence of~~ SEQ ID NO: 11.

6. **(Currently Amended)** The nucleic acid according to Claim 5, wherein said sequence identity similarity is at least about 90%.

7. **(Currently Amended)** A ~~fragment of the nucleic acid~~ present in other than its natural environment selected from the group consisting of:
 ~~—(a)—~~ a nucleic acid that encodes fluorescent protein having an emission maximum ranging from ~~about~~ 620 to 680 nm; and

~~_____ (b) _____ a nucleic acid **and** having a sequence **identity** of similarity of at least about 80% with a nucleotide sequence of SEQ ID NO: 11;~~
~~_____ wherein said fragment encodes a fluorescent product and is present in other than its natural environment.~~

8. **(Currently Amended)** An isolated nucleic acid ~~or mimetic thereof~~ that hybridizes under stringent conditions to a nucleic acid selected from the group consisting of:

(a) a nucleic acid that encodes a fluorescent ***Stichodactylidaen*** protein having an emission maximum ranging from ~~about~~ 620 to 680 nm; and

(b) a nucleic acid having a sequence **identity** of similarity of at least about 80% with ~~a nucleotide sequence of~~ SEQ ID NO: 11;

or its complementary sequence, wherein said stringent conditions are at least as stringent as hybridization at 42°C in a solution comprising 50% formamide, 5 × SSC, 50 mM sodium phosphate, 5 × Denhardt's solution, and 10% dextran sulfate.

9. **(Currently Amended)** A construct comprising a vector and a nucleic acid selected from the group consisting of:

(a) a nucleic acid that encodes a fluorescent ***Stichodactylidaen*** protein having an emission maximum ranging from ~~about~~ 620 to 680 nm; and

(b) a nucleic acid having a sequence **identity** of similarity of at least about 80% with ~~a nucleotide sequence of~~ SEQ ID NO: 11.

10. **(Currently Amended)** An expression cassette comprising:

(a) a transcriptional initiation region functional in an expression host;

(b) a nucleic acid selected from the group consisting of the nucleic acids of:

(i) a nucleic acid that encodes a fluorescent ***Stichodactylidaen*** protein having an emission maximum ranging from ~~about~~ 620 to 680 nm; and

(ii) a nucleic acid having a sequence **identity** of similarity of at least about 80% with ~~a nucleotide sequence of~~ SEQ ID NO: 11; and

- (c) and a transcriptional termination region functional in said expression host.

11. **(Original)** A cell, or the progeny thereof, comprising an expression cassette according to Claim 10 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.

12. **(Previously Presented)** A method of producing an *Anthozoan* chromo and/or fluorescent protein, said method comprising:

growing a cell according to Claim 11, whereby said protein is expressed; and
isolating said protein substantially free of other proteins.

13.-17. **(Canceled)**

18. **(Currently Amended)** In an application that employs a nucleic acid encoding a chromo- or fluorescent protein, the improvement comprising:
employing a nucleic acid selected from the group consisting of:

- (i) a nucleic acid that encodes a fluorescent ***Stichodactylidaen*** protein having an emission maximum ranging from ~~about~~ 620 to 680 nm; and
- (ii) a nucleic acid having a sequence **identity** ~~of similarity of~~ at least about 80% with ~~a nucleotide sequence of~~ SEQ ID NO: 11.

19. **(Currently Amended)** A kit comprising:

a nucleic acid selected from the group consisting of:

- (i) a nucleic acid that encodes a fluorescent ***Stichodactylidaen*** protein having an emission maximum ranging from ~~about~~ 620 to 680 nm; and
- (ii) a nucleic acid having a sequence **identity** ~~of similarity of~~ at least about 80% with ~~a nucleotide sequence of~~ SEQ ID NO: 11; and
instructions for using said nucleic acid.

20. **(Currently Amended)** A fragment of the nucleic acid present in other than its natural environment selected from the group consisting of:

—— (a) —— a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and

—— (b) —— a nucleic acid having a sequence identity of similarity of at least about 75% with a nucleotide sequence of SEQ ID NO: 11;

—— wherein said fragment encodes a fluorescent product and is present in other than its natural environment.

21. **(Currently Amended)** An isolated nucleic acid or mimetic thereof that hybridizes under stringent conditions to a nucleic acid selected from the group consisting of:

—— (a) —— a nucleic acid that encodes a fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and

(b) —— a nucleic acid having a sequence identity of similarity of at least about 75% with a nucleotide sequence of SEQ ID NO: 11;

or its complementary sequence, wherein said stringent conditions are at least as stringent as hybridization at 42°C in a solution comprising 50% formamide, 5 × SSC, 50 mM sodium phosphate, 5 × Denhardt's solution, and 10% dextran sulfate.

22. **(Currently Amended)** A construct comprising a vector and a nucleic acid selected from the group consisting of:

(a) a nucleic acid that encodes a fluorescent Stichodactylidaen protein having an emission maximum ranging from about 620 to 680 nm; and

(b) a nucleic acid having a sequence identity of similarity of at least about 75% with a nucleotide sequence of SEQ ID NO: 11.

23. **(Currently Amended)** An expression cassette comprising:

(a) a transcriptional initiation region functional in an expression host;

(b) a nucleic acid selected from the group consisting of the nucleic acids of:

- (i) a nucleic acid that encodes a fluorescent **Stichodactylidaen** protein having an emission maximum ranging from ~~about~~ 620 to 680 nm; and
- (ii) a nucleic acid having a sequence **identity** ~~of similarity~~ of at least about 75% with ~~a nucleotide sequence of~~ SEQ ID NO: 11; and
- (c) and a transcriptional termination region functional in said expression host.

24. **(Currently Amended)** In an application that employs a nucleic acid encoding a chromo- or fluorescent protein, the improvement comprising:
employing a nucleic acid selected from the group consisting of:

- (i) a nucleic acid that encodes a fluorescent **Stichodactylidaen** protein having an emission maximum ranging from ~~about~~ 620 to 680 nm; and
- (ii) a nucleic acid having a sequence **identity** ~~of similarity~~ of at least about 75% with ~~a nucleotide sequence of~~ SEQ ID NO: 11.

25. **(New)** The nucleic acid according to Claim 1, wherein said protein has one or more amino acid substitutions at positions 2, 36, 63, 143, 173, 201 and 204 as compared to a wild type sequence.

26. **(New)** The nucleic acid according to Claim 1, wherein said protein has one or more amino acid substitutions at positions A2S, T36A, E63A, C143S, L173H, P201L and K204E as compared to a wild type sequence.

27. **(New)** The nucleic acid according to Claim 5, wherein said protein has one or more amino acid substitutions at positions 2, 36, 63, 143, 173, 201 and 204 as compared to a wild type sequence.

28. **(New)** The nucleic acid according to Claim 5, wherein said protein has one or more amino acid substitutions at positions A2S, T36A, E63A, C143S, L173H, P201L and K204E as compared to a wild type sequence.

29. **(New)** The nucleic acid according to Claim 7, wherein said protein has one or more amino acid substitutions at positions 2, 36, 63, 143, 173, 201 and 204 as compared to a wild type sequence.

30. **(New)** The nucleic acid according to Claim 7, wherein said protein has one or more amino acid substitutions at positions A2S, T36A, E63A, C143S, L173H, P201L and K204E as compared to a wild type sequence.